

WHAT IS CLAIMED IS:

- 1           1.       A method for managing client transactions requesting access to a shared  
2 resource, comprising:  
3           logging client transactions in a log file from multiple clients;  
4           determining one client transmitting data at a transmission rate less than a threshold  
5 transmission rate; and  
6           denying subsequent transactions from the determined client access to the shared  
7 resource to provide additional space in the log file for new transactions from additional clients  
8 requesting access to the resource.
  
- 1           2.       The method of claim 1, further comprising:  
2 removing all pending transaction of the determined client from the log file.
  
- 1           3.       The method of claim 1, wherein clients submit transactions requesting the  
2 resource during a session that the clients initiate, further comprising:  
3           determining one client session active longer than a threshold time period, wherein the  
4 determination of whether the client data transmission rate is less than the threshold transmission  
5 rate is made for the determined client whose session is active longer than the threshold time  
6 period, and wherein subsequent transactions are denied access to the shared resource for the  
7 client having the session active longer than the threshold period of time and having the data  
8 transmission rate less than the threshold transmission rate.
  
- 1           4.       The method of claim 1, further comprising:  
2 determining one pending transaction whose access to the resource has completed;  
3 removing the determined pending transaction from the log file.

1           5.       The method of claim 4, further comprising:  
2           determining one client that has transmitted a threshold amount of data, wherein the  
3       determination and removal from the log file of pending transactions whose access to the  
4       resource has completed is made for all the pending transactions of the determined client that has  
5       transmitted the threshold amount of data.

1           6.       The method of claim 1, wherein an oldest pending transaction logged in the log  
2       file is capable of preventing new transactions from being added to the log file.

1           7.       The method of claim 1, further comprising:  
2           providing a first pointer pointing to an oldest pending transaction in the log file that is  
3       capable of preventing new transactions from being added to the log file; and  
4           if one of the removed transactions is the oldest pending transaction in the log file, then  
5       adjusting the first pointer to point to the next oldest pending transaction in the log file, whereby  
6       adjusting the first pointer frees space in the log file for new transactions to be added.

1           8.       The method of claim 7, further comprising:  
2           providing a second pointer pointing to a most recently added transaction to the log file;  
3       and  
4           adding a new transaction to the log file by writing information on the new transaction to  
5       an address in the log file following the second pointer and adjusting the second pointer to point  
6       to the address of the added new transaction, wherein one new transaction cannot be added to  
7       the log file if the first pointer addresses a location in the log file adjacent to the location  
8       addressed by the second pointer.

1           9.       The method of claim 8, wherein new transactions are added to sequential  
2 addresses in the log file, further comprising:  
3           if the second pointer is at the last address in the log file, then writing information on the  
4 new transaction to the first address in the log file and adjusting the second pointer to point to the  
5 first address in the log file.

1           10.      The method of claim 1, wherein access to the resource is provided through a  
2 server, wherein the server maintains the log file.

1           11.      The method of claim 10, further comprising:  
2           redirecting transactions from the determined client to an additional server providing  
3 access to another copy of the resource requested by the client transactions.

1           12.      The method of claim 1, wherein the resource comprises a storage device and  
2 wherein the transactions provide updates to data in the storage device.

1           13.      The method of claim 12, wherein the update transactions are provided by a  
2 client backup program to backup client data in the storage device.

1           14.      A system for managing client transactions, comprising:  
2           a shared resource, wherein the client transactions request access to the shared  
3 resource;  
4           a computer readable medium including a log file;  
5           means for logging client transactions in the log file from multiple clients;  
6           means for determining one client transmitting data at a transmission rate less than a  
7 threshold transmission rate; and

8 means for denying subsequent transactions from the determined client access to the  
9 shared resource to provide additional space in the log file for new transactions from additional  
10 clients requesting access to the resource.

1 15. The system of claim 14, further comprising:  
2 means for removing all pending transaction of the determined client from the log file.

1 16. The system of claim 14, wherein clients submit transactions requesting the  
2 resource during a session that the clients initiate, further comprising:  
3 means for determining one client session active longer than a threshold time period,  
4 wherein the determination of whether the client data transmission rate is less than the threshold  
5 transmission rate is made for the determined client whose session is active longer than the  
6 threshold time period, and wherein subsequent transactions are denied access to the shared  
7 resource for the client having the session active longer than the threshold period of time and  
8 having the data transmission rate less than the threshold transmission rate.

1 17. The system of claim 14, further comprising:  
2 means for determining one pending transaction whose access to the resource has  
3 completed;  
4 means for removing the determined pending transaction from the log file.

1 18. The system of claim 17, further comprising:  
2 means for determining one client that has transmitted a threshold amount of data,  
3 wherein the determination and removal from the log file of pending transactions whose access  
4 to the resource has completed is made for all the pending transactions of the determined client  
5 that has transmitted the threshold amount of data.

1           19.     The system of claim 14, wherein an oldest pending transaction logged in the log  
2     file is capable of preventing new transactions from being added to the log file.

1           20.     The system of claim 14, further comprising:  
2                 means for providing a first pointer pointing to an oldest pending transaction in the log file  
3     that is capable of preventing new transactions from being added to the log file; and  
4                 means for adjusting the first pointer to point to the next oldest pending transaction in the  
5     log file if one of the removed transactions is the oldest pending transaction in the log file,  
6     whereby adjusting the first pointer frees space in the log file for new transactions to be added.

1           21.     The system of claim 20, further comprising:  
2                 means for providing a second pointer pointing to a most recently added transaction to  
3     the log file; and  
4                 means for adding a new transaction to the log file by writing information on the new  
5     transaction to an address in the log file following the second pointer and adjusting the second  
6     pointer to point to the address of the added new transaction, wherein one new transaction  
7     cannot be added to the log file if the first pointer addresses a location in the log file adjacent to  
8     the location addressed by the second pointer.

1           22.     The system of claim 21, wherein new transactions are added to sequential  
2     addresses in the log file, further comprising:  
3                 means for writing information on the new transaction to the first address in the log file  
4     and adjusting the second pointer to point to the first address in the log file if the second pointer  
5     is at the last address in the log file.

1           23.     The system of claim 14, further comprising:  
2           a server providing access to the shared resource, wherein the server includes the  
3     computer readable medium including the log file.

1           24.     The system of claim 23, further comprising:  
2           an additional server providing access to an additional copy of the shared resource;  
3           means for redirecting transactions from the determined client to the additional server to  
4     provide the redirected transaction access to the shared resource.

1           25.     The system of claim 14, wherein the resource comprises a storage device and  
2     wherein the transactions provide updates to data in the storage device.

1           26.     The system of claim 25, further comprising:  
2           a client backup program, wherein the update transactions are provided by the client  
3     backup program to backup client data in the storage device.

1           27.     An article of manufacture for managing client transactions requesting access to a  
2     shared resource in a log file, the article of manufacture comprising code capable of causing a  
3     processor to perform:  
4           logging client transactions in the log file from multiple clients;  
5           determining one client transmitting data at a transmission rate less than a threshold  
6     transmission rate; and  
7           denying subsequent transactions from the determined client access to the shared  
8     resource to provide additional space in the log file for new transactions from additional clients  
9     requesting access to the resource.

1           28.     The article of manufacture of claim 27, wherein the code is further capable of  
2 causing the processor to perform:  
3           removing all pending transaction of the determined client from the log file.

1           29.     The article of manufacture of claim 27, wherein clients submit transactions  
2 requesting the resource during a session that the clients initiate, wherein the code is further  
3 capable of causing the processor to perform:  
4           determining one client session active longer than a threshold time period, wherein the  
5 determination of whether the client data transmission rate is less than the threshold transmission  
6 rate is made for the determined client whose session is active longer than the threshold time  
7 period, and wherein subsequent transactions are denied access to the shared resource for the  
8 client having the session active longer than the threshold period of time and having the data  
9 transmission rate less than the threshold transmission rate.

1           30.     The article of manufacture of claim 27, wherein the code is further capable of  
2 causing the processor to perform:  
3           determining one pending transaction whose access to the resource has completed;  
4           removing the determined pending transaction from the log file.

1           31.     The article of manufacture of claim 30, wherein the code is further capable of  
2 causing the processor to perform:  
3           determining one client that has transmitted a threshold amount of data, wherein the  
4 determination and removal from the log file of pending transactions whose access to the  
5 resource has completed is made for all the pending transactions of the determined client that has  
6 transmitted the threshold amount of data.

1           32.     The article of manufacture of claim 27, wherein an oldest pending transaction  
2     logged in the log file is capable of preventing new transactions from being added to the log file.

1           33.     The article of manufacture of claim 27, wherein the code is further capable of  
2     causing the processor to perform:

3                 providing a first pointer pointing to an oldest pending transaction in the log file that is  
4     capable of preventing new transactions from being added to the log file; and  
5                 if one of the removed transactions is the oldest pending transaction in the log file, then  
6     adjusting the first pointer to point to the next oldest pending transaction in the log file, whereby  
7     adjusting the first pointer frees space in the log file for new transactions to be added.

1           34.     The article of manufacture of claim 33, wherein the code is further capable of  
2     causing the processor to perform:

3                 providing a second pointer pointing to a most recently added transaction to the log file;  
4     and  
5                 adding a new transaction to the log file by writing information on the new transaction to  
6     an address in the log file following the second pointer and adjusting the second pointer to point  
7     to the address of the added new transaction, wherein one new transaction cannot be added to  
8     the log file if the first pointer addresses a location in the log file adjacent to the location  
9     addressed by the second pointer.

1           35.     The article of manufacture of claim 34, wherein new transactions are added to  
2     sequential addresses in the log file, and wherein the code is further capable of causing the  
3     processor to perform:

4                 if the second pointer is at the last address in the log file, then writing information on the  
5     new transaction to the first address in the log file and adjusting the second pointer to point to the  
6     first address in the log file.



1           36.     The article of manufacture of claim 27, wherein access to the resource is  
2     provided through a server, wherein the server maintains the log file.

1           37.     The article of manufacture of claim 36, wherein the code is further capable of  
2     causing the processor to perform:  
3           redirecting transactions from the determined client to an additional server providing  
4     access to another copy of the resource requested by the client transactions.

1           38.     The article of manufacture of claim 27, wherein the resource comprises a  
2     storage device and wherein the transactions provide updates to data in the storage device.

1           39.     The article of manufacture of claim 38, wherein the update transactions are  
2     provided by a client backup program to backup client data in the storage device.